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Oncogenesis in the Rabbit: Genetic Susceptibility, Vertical Transmission of
Virus and Environmental Influences. Grant #758

In all, probably fewer than 30 cases of lymphoreticular tumors of rabbits have been reported since the earliest description of a case of visceral lymphosarcoma in 1914. We have observed over 30 cases of lymphosarcoma in a small breeding colony of Wirehair (WH) rabbits within a few years, and affected animals of both sexes were found in each of several generations. Although they descend from a common male sire, many have additional common ancestors. Because of the unusual case aggregation of lymphosarcoma in WH rabbits, we wish to investigate the host genetic factors conferring susceptibility to lymphosarcomagenesis, the mode of inheritance or transmission, the possibility of a vertically transmitted virus, and the environmental influences which may modify incidence and pathogenesis of lymphosarcoma.

Another strain of rabbits, strain X, which is genetically related to the WH strain, is characterized by a high incidence of immune hemolytic anemia and thymoma. We wish to determine the pathogenic bases of both immune hemolytic anemia and thymoma, and investigate their possible etiological relationship.

We want to find out the mode of inheritance or transmission of immune hemolytic anemia and thymoma in strain X rabbits so that we may evaluate the possibility of a common hereditary basis of all conditions in both strain X and WH, since the two strains are genetically related. It may be that the various clinical or phenotypic expressions derive from differences in the genetic background of the two strains.

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